



Book Review

Genetically Modified Athletes: Biomedical Ethics, Gene Doping and Sport. By Andy Miah. London: Routledge, 2004

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As new technologies are developed and applied in a sporting context we ask the questions: What is good sport? What is cheating? What technologies should athletes use? In pursuit of the answer to these and other questions, the author indulges his, self confessed, fascination with post-human and trans-human technologies as a tool for presenting a detailed discussion of the issues that the possibility and reality of genetic modification poses for athletes. In so doing he contemplates the nature of human enhancement in a context that makes the major issues clear, whilst avoiding the negativity associated with the term eugenics.

Structured around four distinct but inter-related sections headed *Anti-doping and Performance Enhancers*; *Conceptualising Genetics in Sport*; *The Ethical Status of Genetic Modification in Sport* and *Genetically Modified Athletes* the book reveals from the outset the authors positive stance on the development and use of enhancement technologies in sport. However, the discussion is for the most part balanced posing questions and explaining positions, before drawing conclusions apparently in favour of genetic enhancement.

In the first part, the author discusses *Anti-doping and Performance Enhancers* by posing two questions *why genetics now?* and *why not dope?* His response to the first of these questions recognises the fast pace of technological developments and the fact that “for many the prospect of *genetically modified athletes* conjures up highly dystopian ideals, which the sporting examples ground in potential and detailed contexts. The use of performance enhancement in sport brings into question a curiosity for testing humanity in a manner comparable to, say, life extension” (pg.11). Thus we see the beginnings of the parallels the author seeks to develop between the applications of new technologies in sport and their use in other areas of human life. To answer the question *why not dope?*, there is first a review of the attitudes that exist within the sporting community towards doping (initially referring to the use of performance enhancing drugs, developing later to the book’s broader theme of the use of performance enhancing genetic technologies). Drawing on literature discussing “the harms” of drug doping, a framework for understanding the related social and ethical concerns is developed. The concepts of doping as harm to the athlete and harm to the sport help to frame the key debates of *genetically modified athletes* in relation to athletes’ health and the concept of cheating and unfairness, providing the bedrock for the author’s later bioethical analysis. These two ideas appear to develop throughout the book, building around notions of the altering of the nature of the athlete and the nature of sport.

The second part, *Conceptualising Genetics in Sport*, discusses the nature of genetic technologies such as they might be developed to promote or enhance athletes and athletic performance. Noting the wide and varied nature of genetic and genomic technologies, the author articulates the suggestion that, though varied in their nature, the potential applications of these technologies give rise to relatively similar ethical problems. The author identifies those technologies characterised in terms of genomics, somatic cell modification and/or genetic selection as being those most likely to be of use for developing the genetically modified athlete. He then observes that “while modest expectations are sensible in relation to genetically modifying athletes, there is a growing expectation that science will soon make possible such alterations” (pg.50). Having identified some specific technologies and studies that may lead to the advent of the genetically modified athlete – discussing in particular studies of “growth factors” and their impact potential impact on sport – the author then provides a brief review of the wide range of “concerned voices” that have spoken against the notion of the genetically modified athlete or gene-doping. Among these “concerned voices” we hear at first from many athletes who speak against the potential uses of genetic technologies in a sporting context, a view that is then supported by many scientists who debunk the usefulness of any actual technology that might be developed, and by policy making bodies who express a desire to “stay ahead of the cheaters”. In contrast to these views it is suggested that the genuine reaction of sporting professionals remains uncertain, pointing to the desirability of selecting the best possible members for a sporting team as an indicator of the “ambiguous ethical status” of the technologies in question. By highlighting the disparate views within both the scientific and sporting communities, the author also highlights the general interest of the world media in portraying a sensationalised image of “superhumans” in sport. It is through placing the discussions of gene-doping and the genetic medication of athletes in a socio-political and socio-legal context that the author’s own trans-humanist sympathies become abundantly clear. However, he articulates a clear response to criticisms of enhancement technologies, and strives to place the discussion in a clear conceptual framework to provide the opportunity for genuine ethical discussion.

Thus the subsequent discussion, in part three, of what is termed *The Ethical Status of Genetic Modification in Sport* deals with a broad range of ethical issues, under the chapter headings: *humanness, dignity, and autonomy; personhood, identity and the ethics of authenticity; viruses, disease, illness, health, well-being and enhancement and unfair advantages and other harms*. Throughout this discussion the author draws on the critical mass of philosophical and sociological literature around questions of both human enhancement and sport to review in detail the nature of the academic debate, and to develop a synergy between bioethics and sports ethics.

The final section draws together the key points from the earlier three sections to discuss the nature of *Genetically Modified Athletes*. Asking the important question: is genetic modification a method of *enhancing, altering, or manipulating people?* and arguing that *Sport Needs GM* the author charges that “there has not been a sufficient level of analysis within sports ethics and policy making to derive a *conceptual framework for performance enhancement*” (pg.175) and criticises policy makers for

being overly concerned with performance enhancing drugs as opposed to other technologies with similar effects. He theorises the end of the “anti-doping” mentality in sport, and calls for a policy to engage with the uses of genetic modification in sport suggesting the possibility of the creation “of distinct, genetically enhanced competitions”. The utopia or dystopia of sport that this would create remains to be seen, but as the author notes in conclusion “the ramifications for competitive sport would be immense”.

It would be a mistake to categorise this book as either a discussion of sports ethics or bioethics, rather it develops an integrative approach to the discussion of sporting activities and human enhancement drawing on an interdisciplinary body of literature. The discussion of human enhancement in the recognisable, everyday, setting of sport provides a solid framework that avoids an overly abstract analysis. With a definite pro-enhancement theme throughout, the author carefully considers the current world attitudes towards sports and sportsmen, and the current policies of key policy making bodies in the world of sport. Whether the notion of genetically modified athletes (or genetically modified humans in general) fills the reader with utopian joy or dystopian dread the book is of interest to a range of disciplines, uniting sports studies with interdisciplinary bioethics and policy discussions.